

WHAT IS CLAIMED IS:

1 1. A cobalt-iron alloy film comprising an
2 cobalt-iron alloy film having a saturation magnetization
3 of at least about 2.30 Tesla, said film including between
4 about 55% and about 75% iron and the remainder cobalt,
5 said percentage being by weight based on the total weight
6 of the alloy.

1 2. An alloy film in accordance with Claim 1
2 wherein said iron constituent is present in an amount of
3 between about 60% and about 66%.

1 3. An alloy film in accordance with Claim 2
2 wherein said iron constituent is present in an amount of
3 between about 62% and about 65%.

1 4. An alloy film in accordance with Claim 1
2 wherein said saturation magnetization is in the range of
3 between about 2.32 and about 2.50 Telsa.

1 5. An alloy film in accordance with Claim 4
2 wherein said saturation magnetization moment is in the
3 range of between about 2.38 and about 2.53 Telsa.

1 6. An alloy film in accordance with Claim 1
2 wherein said anisotropy is manifested by an easy axis
3 coercivity of no more than about 22 Oe and which drops to
4 no more than about 12 Oe upon annealing; a hard axis
5 coercivity of no more than about 17 Oe which drops to no
6 more than about 9 Oe upon annealing; and a magnetic

4 salts, one or more cobaltous salts, an acid which is at
5 least one mono- or polycarboxylic acid having pKa in the
6 range of between about 3.5 and about 5.5, a buffer which
7 is at least one buffer having a pKa of about 6 to 8 which
8 does not co-deposit into said alloy film and an aromatic
9 sulfinic acid or a salt thereof.

1 12. A process in accordance with Claim 11
2 wherein said ferrous salt is a ferrous sulfate salt and
3 said cobalt salt is a cobalt sulfate salt.

1 13. A process in accordance with Claim 12
2 wherein said ferrous sulfate and said cobalt sulfate
3 salts are hydrates.

1 14. A process in accordance with Claim 11
2 wherein said acid is acetic acid, succinic acid, glutaric
3 acid, methylsuccinic acid, mannitol or sorbitol.

1 15. A process in accordance with Claim 14
2 wherein said acid is acetic acid.

1 16. A process in accordance with Claim 11
2 wherein said buffer is boric acid or an alkyl-substituted
3 pyridine.

1 17 A process in accordance with Claim 16
2 wherein said buffer is boric acid, 2-picoline or 2,6-
3 lutidine.

18. A process in accordance with Claim 11 wherein said aromatic sulfinic acid or salt thereof is a benzenesulfinate salt.

19. A process in accordance with Claim 18 wherein said benzenesulfinic salt is a sodium salt of a benzenesulfinate hydrate salt.

20. A process in accordance with Claim 11 wherein said aqueous medium includes a surfactant.

21. A process in accordance with Claim 11 wherein said aqueous medium includes a halide salt.

22. A process in accordance with Claim 20 wherein said halide salt is sodium chloride.

23. A process in accordance with Claim 11 wherein said alloy film is electrodeposited upon an electrically conductive substrate from a wet chemical medium.

24. A process in accordance with Claim 23 wherein said electrically conductive substrate is a thin film of a nickel-iron alloy, a nickel-cobalt alloy, an iron-cobalt alloy, a cobalt-nickel-iron alloy, an iron-nitrogen alloy, an iron aluminum-boron alloy, rhodium, ruthenium, platinum, gold, copper or palladium.

25. A process in accordance with Claim 23 where said wet chemical medium includes acetic acid, boric acid, a cobalt sulfate salt, an iron sulfate salt

